

REMARKS/ARGUMENTS

Claims 11-29 are active.

Claims 11, 15, 16, 20, 24, and 25 have currently been amended. The amended claims now claim a temperature range of from 15 °C to less than 20 °C.

No new matter is added.

The rejection of Claims 11-29 under 35 USC §112, second paragraph is respectfully traversed.

The Examiner has requested clarification regarding Claim 11 as to what is obtained from washing the crystals and clarification regarding Claim 20 as to what the crystals comprise besides acrylic acid. Clearly, as the preamble of Claim 11 states, a purified acrylic acid is obtained from washing the crystals. In Claim 20, the crystals further comprise one or more impurities/byproducts of any type in addition to the acrylic acid as described in page 3, lines 10-18 of the specification. Furthermore, Applicants direct the Examiner's attention to Claims 1 and 10 of the parent case, now issued patent US 6,700,016, which the Office has already indicated to be definite. Withdrawal of the rejection is requested.

The double patenting rejection of Claims 11-29 over Eck'016 (US 6,700,016) is respectfully traversed. The amendments to Claims 11, 15, 16, 20, 24 and 25 obviate the rejection as the temperature range now being claimed is from 15 °C to less than 20 °C, which does not include 20 °C. Eck'016 however claims a temperature range of 20°C to 35 °C. Therefore, the limitation of the temperature range from 15 °C to less than 20 °C is not described nor suggested in the claims of Eck'016. Withdrawal of the rejection is requested.

The rejection of Claims 11-29 under 35 U.S.C. §103(a) over Eck'222 (WO 00/05188) is respectfully traversed.

Applicants note that the present application claims priority to DE 199 26 082.6 which was filed on June 8, 1999. In contrast, Eck'222 was filed on July 21, 1999 with an earlier German application filed on July 22, 1998. This German application, which Eck'222 claims priority to, was published on January 27, 2000. Therefore, the present application has an earlier date of invention relative to Eck'222. A certified English translation of DE 199 26 082.6 will be filed shortly. Withdrawal of the rejection is requested.

The rejection of Claims 11-29 under 35 U.S.C. §103(a) over Eck'901 (WO 98/01415) is respectfully traversed.

The Office has further rejected Claims 11-29 over Eck'901 maintaining that in the washing step, one of ordinary skill would expect that the washing step is carried out at room temperature, which approximates the temperature range covered in the rejected claims.

It appears that the Office is stating that the temperature range of 15 – 20 °C is near or approximately room temperature, but the Office has not provided a clear definition of what constitutes room temperature. As such, Applicants submit that one of ordinary skill in the art would also consider 23-25 °C to be encompassed by room temperature.

Applicants direct the Office's attention to the issued parent case, Eck'016, where the Office has found washing the acrylic acid crystals with a wash liquid having a temperature range of 20-35°C to be allowable in view of CA 2,259,945 (which appears to be an equivalent of Eck'901). Clearly, the temperature range of 20-35 °C encompasses the range of 23-25 °C. Therefore, as the Patent Office has found the temperature range of 20-35°C to be allowable, the Patent Office has already effectively concluded that washing the crystals near room temperature does not render the claimed invention obvious in view of the cited reference. As

such, Applicants submit that washing the acrylic acid crystals with a wash liquid having a temperature of from 15 °C to less than 20 °C is not obvious over of Eck'901.

Furthermore, Applicants submit that one of ordinary skill in the art would not have been motivated to wash the acrylic acid crystals with a wash liquid having a temperature of from 15 °C to less than 20 °C. The freezing point of acrylic acid is approximately 14 °C. Therefore, the crystals to be washed require a temperature below 14 °C. Considering the potential heat transfer between the crystal and the wash liquid, there is considerable risk of potentially freezing the wash liquid onto the crystal, which would not provide any purifying effect. More importantly, such freezing may also deleteriously cause some of the mother liquor, which may be present in the vicinity of the crystal, to freeze onto the crystal. Clearly, one of ordinary skill in the art would not be motivated to utilize a temperature range so close to the freezing point of the acrylic acid.

However, none of these deleterious effects occur when a wash liquid having a temperature of 15 °C to less than 20°C is utilized. Rather, Table 3 of the specification (reproduced below) clearly shows that the purification effects for a wash liquid having a temperature of 15 °C and 20 °C are comparable to those performed at 25 °C and 30 °C, demonstrating unexpected results. In the Table below, the amount of acrylic acid is in weight percentage, while the amount of impurities is in ppm.

| | Without washing | 15 °C | 20 °C | 25 °C | 30 °C |
|-------------------|-----------------|-------|-------|-------|-------|
| Acrylic acid | 99.62 | 99.75 | 99.76 | 99.77 | 99.77 |
| Acetic acid | 1920 | 1504 | 1436 | 1422 | 1386 |
| Propionic acid | 219 | 189 | 189 | 182 | 174 |
| Furan(II)aldehyde | 281 | 139 | 118 | 94 | 94 |
| Benzaldehyde | 19 | 9 | 7 | <5 | <5 |
| Maleic acid | 18 | 7 | 6 | <5 | <5 |
| Allyl acrylate | 165 | 79 | 68 | 53 | 51 |
| Water | 510 | 261 | 248 | 241 | 241 |
| Others | 624 | 301 | 294 | 270 | 254 |

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Withdrawal of the rejections is requested.

Applicants submit the application is now in condition for allowance. Early notification of such allowance is earnestly solicited.

Respectfully submitted,

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